SCIENCE OF US | DEC. 28, 2018

What Deep Breathing Does to Your Body

By Amanda Arnold

Breathe in for four, out for eight. Photo: Valeriya Tikhonova/Blend Images/Getty Images

For being free and incomparably easy to practice, deep breathing is a pretty miraculous healing exercise: It can reduce anxiety, bring you into the present moment through mindfulness, and even help you remember how to respond to your specific stressors. The average person is cognizant of deep breathing's psychological effects; we feel it slow down our racing minds and calm us down. But what's actually going on in the body here? Why, physiologically speaking, does taking a deep breath make me feel slightly less rattled, at least temporarily?

Before understanding deep breathing's physiological benefits, you first have to grasp how your body responds to stress. As most people have experienced, when you're worried, upset, or anxious, you can feel it viscerally — your heart starts to beat faster and faster, you can feel dizzy, and blood rushes toward your heart and your brain. According to Dr. Tania Elliott of NYU Langone Health, the system responsible for this is your sympathetic nervous system, better known as your "fight or flight response."

"Evolutionarily, you'll only develop this stress response if you're being attacked by a predator," she told the Cut. "But what's happened over time is that because we're experiencing so much chronic, low-level stress on our day-to-day life, you have this low-level activation of the stress response all the time." She's referring both to stressors that may not seem overwhelming in isolation — long work-commute times, work conflicts, and lack of time for social interactions — as well as more major sources of anxiety, like marital problems or high cost of living.

When your sympathetic nervous system fills your body with all that cortisol and adrenaline, you don't feel so stellar; this is where deep breathing comes in. To help explain how your body's relaxation response can oppose its stress response, Esther Sternberg, research director at the Arizona Center for Integrative Medicine, uses a car metaphor: If you want to "reduce" your stress response, in which you directly combat the stressor, that's like "taking your foot off the gas." Instead, Sternberg recommends stopping this response — i.e., putting your foot on the brakes — as it's much more efficient.

"A much more effective and quicker way of interrupting that stress response is to turn on the vagus nerve, which in turn powers up the parasympathetic nervous system," she told the Cut. "Deep-breathing turns on the vagus nerve enough that it acts as a brake on the stress response."

The vagus nerve, along with stimulating your body's relaxation response, can inhibit inflammation, slow down your heart, and even help you make memories. It's the longest and most complex of the cranial nerves, as it sends sensory fibers from your brain stem to all your visceral organs. If you've ever been punched in the pit of your stomach (the solar

plexus) so hard that you faint, Sternberg says you've experienced your vagus nerve "turned on high-power."

She continues: "It slows the heart so much that you faint."

While fainting from a direct blow to the stomach is objectively unpleasant, this trigger does come with a whole slew of health benefits: It can help quell anxiety, decrease blood pressure, and relax your brain waves. Per Elliott, some EEGs have actually shown that deep breathing can lead to an increase in alpha brain-waves, which are typically present when you're feeling relaxed, like when you're meditating or even daydreaming. (There are five types of brain waves, with alpha brain-waves measuring a frequency between 8 and 12 hertz.)

But deep breathing can do more than just stimulate the parasympathetic nervous system in the midst of a stressful moment; it can prevent your stress response from overacting in the first place. To "overcome the unhealthy day-to-day stress response," as Elliott puts it, you should practice this type of breathing daily, and not just when you're feeling stressed. When starting out, she recommends putting aside two minutes, once or twice a day, to slow down your breath: In for four counts, out for eight counts. (Sternberg, conversely, recommends Dr. Andrew Weil's popular method: Breathe in for four counts, hold for seven counts, and breathe out for eight counts.)

"Most people don't realize the chronic, constant stress we're under every day, which has a cumulative effect," she told the Cut. "We need to get back to our baseline relaxation to bring us to our calm, normal state."

TAGS: SCIENCE OF US ANXIETY BREATHING

LEAVE A COMMENT

MOST POPULAR

1. What Exactly Is Demure?

2. What's the Deal With 'Hawk Tuah' Girl?
3. Who Is Jasveen Sangha, Hollywood's 'Ketamine Queen'?
4. How Is Harry and Meghan's Colombia Trip Going?
5. Dakota Johnson and Chris Martin Are Actually Still Together

---

THE LATEST

PARENTING | 7:00 A.M.

Can Divorce Make You a Better Parent? Separating can force parents to discuss how they actually care for their kids.

By Kathryn Jezer-Morton

YESTERDAY AT 7:00 P.M.

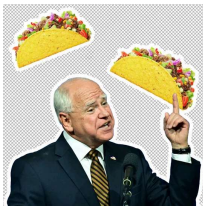
The Musician Who Ghosts Three Dates in One Week

YESTERDAY AT 4:58 P.M.

What in the Skechers Is This?

YESTERDAY AT 4:17 P.M.

White Guys Are Mad About Tim Walz's 'White-Guy Tacos'



YESTERDAY AT 3:59 P.M.

What Lily Collins, Tavi Gevinson, and Ashley Graham Wore This Week

YESTERDAY AT 3:00 P.M.

16 Eczema Creams That Soothe My Eczema

YESTERDAY AT 2:50 P.M.

The 20 Best Face Exfoliators for Soft, Smooth Skin

YESTERDAY AT 2:12 P.M.

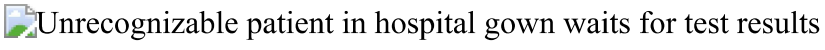
Looks Like J.Lo Blew Off Ben Affleck's Birthday

YESTERDAY AT 1:34 P.M.

Dakota Johnson and Chris Martin Are Actually Still Together

YESTERDAY AT 1:30 P.M.

I've Tried the Best Lip Liners for Every Budget and Skin Tone


Unrecognizable patient in hospital gown waits for test results

HEALTH | YESTERDAY AT 1:24 P.M.

The Pap Smear May Finally Be on Its Way Out A less-invasive way to detect cervical cancer will be available this fall.

By Tariro Mzezewa

YESTERDAY AT 1:03 P.M.

Does Jordan Chiles Really Have to Give Back Her Bronze Medal?

GYMNASTICS ARTISTIC-OLY-PARIS-2024-MEDALS

YESTERDAY AT 1:00 P.M.

19 Closet-Organization Ideas If You Don't Like *That* Type of Mess

YESTERDAY AT 12:22 P.M.

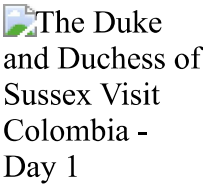
Hawk Tuah Girl Threw the First Pitch at a Mets Game

YESTERDAY AT 12:11 P.M.

Did Taylor Swift Just Diss Kanye?

YESTERDAY AT 11:04 A.M.

How Is Harry and Meghan's Colombia Trip Going?



YESTERDAY AT 11:00 A.M.

She Lost a Fallopian Tube After a Hospital Denied Her Abortion

YESTERDAY AT 10:26 A.M.

Who Is Jasveen Sangha, Hollywood's 'Ketamine Queen'?

FIRST PERSON | YESTERDAY AT 9:00 A.M.

My Decision to Go Commando Two years ago, menopause finally freed me from my love-hate relationship with underwear. My body, it turns out, had other plans.

By Molly Rosen

YESTERDAY AT 8:00 A.M.

A Handy Guide to (Surviving) Your Saturn Return

MORE STORIES ›

THE CUT

STYLE | SELF | CULTURE | POWER

ABOUT THE CUT
ABOUT NEW YORK MAGAZINE
NEWSLETTERS
HELP
CONTACT
PRESS
MEDIA KIT
WE'RE HIRING
PRIVACY
TERMS
AD CHOICES
DO NOT SELL MY INFO
ACCESSIBILITY
DO NOT SELL OR SHARE MY PERSONAL DATA

THE CUT IS A VOX MEDIA NETWORK.
© 2024 VOX MEDIA, LLC. ALL RIGHTS RESERVED.